

WHAT IS CLAIMED IS:

1. A structure for a bond pad used on a semiconductor device comprising:

a metal layer;

an interconnect formed through a dielectric layer connecting to the metal layer;

a bond pad having a first portion disposed over the metal layer and the interconnect, and a second portion disposed over the dielectric layer;

the first portion including a bond area for providing an attachment point for a connection; and

the second portion including a probe area for providing contact with a probe.

2. The structure as recited in claim 1, wherein the first metal layer includes copper.

3. The structure as recited in claim 1, wherein the bond pad includes aluminum.

4. The structure as recited in claim 1, further comprising a barrier layer disposed between the interconnect and the metal line to prevent diffusion therebetween.

FOI 290-0915850

5. The structure as recited in claim 1, wherein the bond pad includes a thickness of less than about 2 microns.

5 6. The structure as recited in claim 1, further comprising a passivation layer formed on the bond pad to protect the bond pad.

10 7. The structure as recited in claim 6, wherein the passivation layer includes a first opening for the bond area and a second opening for the probe area.

15 8. The structure as recited in claim 6, wherein the passivation layer includes an opening shared by the bond area and the probe area.

9. The structure as recited in claim 1, wherein the bond pad is permanently connected to a bond wire.

20 ~~10.~~ A structure for a bond pad used on a semiconductor device comprising:

a metal layer patterned to form at least one metal line;

09893160-062701

a dielectric layer formed on the metal layer and patterned to form a via to the at least one metal line;

a barrier layer formed in contact with the metal layer through the via;

5 an interconnect formed in the via and connecting to the metal layer through the barrier layer;

a bond pad having a first portion disposed over the metal layer and the interconnect, and a second portion disposed over the dielectric layer;

10 the first portion including a probe area for providing contact with a probe for device testing; and

the second portion including a bond area for providing an attachment point for a bond wire.

15 *Sh BY* 11. The structure as recited in claim 10, wherein the first metal layer includes copper.

12. The structure as recited in claim 10, wherein the bond pad includes aluminum.

20

13. The structure as recited in claim 10, wherein the barrier layer includes Ta or TaN.

09893160-062701

14. The structure as recited in claim 10, wherein the bond pad includes a thickness of less than about 2 microns.

5 15. The structure as recited in claim 10, further comprising a passivation layer formed on the bond pad.

10 16. The structure as recited in claim 15, wherein the passivation layer includes a first opening for the bond area and a second opening for the probe area.

15 17. The structure as recited in claim 15, wherein the passivation layer includes an opening shared by the bond area and the probe area.

18. A structure for a bond pad used on a semiconductor device comprising:

a copper layer patterned to form at least one metal line;

20 a dielectric layer formed on the copper layer and patterned to form a via to the at least one metal line;

a diffusion barrier layer formed in contact with the copper layer through the via;

FOI 2025-06-27 09:53:16

an aluminum interconnect formed in the via and connecting to the copper layer through the diffusion barrier layer, the diffusion barrier for preventing atomic mixing between the copper layer and the aluminum interconnect;

5 a bond pad integrally formed with the interconnect and having a first portion disposed over the metal layer and the interconnect, and a second portion disposed over the dielectric layer;

10 the first portion including a probe area for providing contact with a probe for device testing such that probing the probe area eliminates the capability for damage to the diffusion barrier layer and the second portion; and

the second portion including a bond area for providing an attachment point for a bond wire.

15 19. The structure as recited in claim 18, wherein the barrier layer includes Ta or TaN.

20 20. The structure as recited in claim 18, wherein the bond pad includes a thickness of less than about 2 microns.

FOI 2009-062791

21. The structure as recited in claim 18, further comprising a passivation layer formed on the bond.

22. The structure as recited in claim 21, wherein
5 the passivation layer includes a first opening for the bond area and a second opening for the probe area.

23. The structure as recited in claim 21, wherein
10 the passivation layer includes an opening shared by the bond area and the probe area.

09893160-062701